DOCUMENT RESUME

ED 434 411 EA 030 075

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TITLE Breaking New Ground in High School Integrated Curriculum. Breaking Ranks: Making It Happen.
INSTITUTION National Association of Secondary School Principals, Reston, VA.
PUB DATE 1999-00-00
NOTE 19p.; For others in the series, see EA 030 072, EA 030 073, and EA 030 077.
PUB TYPE Guides - Non-Classroom (055)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Change Strategies; *Curriculum Design; *Curriculum Development; Educational Change; *High Schools; *Instructional Leadership; Principals; Strategic Planning

ABSTRACT

This booklet is part of a series developed by the National Alliance of High Schools Advisory Council to serve as a resource for high school leaders. It targets specific changes for high school curricula and examines three elements of curriculum design: content, skills, and assessment, and how they can be upgraded for high school students. The volume highlights design practices that promote integrated learning, offering examples of programs that exemplify contemporary curricula. The plan is presented in 8 design practices: (1) high school teachers should select a specific format from a range of options, including discipline field-based design, parallel discipline design, and student-centered design; (2) schools must upgrade and revise content to focus on contemporary issues and problems; (3) teachers should frame their curriculum content and classroom investigations around sets of essential questions; (4) curriculum designs should develop the skills and techniques necessary for entering careers and adulthood; (5) assessment products and/or performances should be targeted to provide comprehensive evidence of skill development, conceptual insight, and knowledge acquisition; (6) the type of assessment should match the developmental characteristics of the adolescent; (7) curriculum designs should be matched by structural formats that best serve the learner; and (8) high school curriculum planners should learn from the work of others. (RJM)

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NATIONAL ALLIANCE OF HIGH SCHOOLS
BREAKING RANKS: MAKING IT HAPPEN

BREAKING NEW GROUND IN HIGH SCHOOL INTEGRATED CURRICULUM

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Introduction to the Series

The "Making It Happen" series was developed by the National Alliance of High Schools Advisory Council to serve as a resource for high school leaders. The contents are recommended practical strategies, procedures, and ideas to enable school leaders to successfully plan and implement programs that will provide opportunities for students to be adequately prepared for the 21st Century.

Topics have been selected for this series by the NAHS Advisory Council from among the range of recommendations, themes, and programs discussed in *Breaking Ranks: Changing an American Institution.*

The "how to implement" strategies are designed to provide clear and concise procedures for successful implementation and outcomes in your school improvement plan. The strategies are based on research and also "best practices" of current schools.

The Council welcomes input regarding additional programs that support the recommendations and themes cited in *Breaking Ranks.*

L. Dean Webb is editor for the "Making It Happen" Series.

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Breaking New Ground in High School Integrated Curriculum

"The old designs don't quite work anymore," Andrew Smith, a 30-year veteran science teacher, reflected. "Everything keeps changing. Just look at my courses. The biology I taught in 1969 as a new teacher is not the same subject. There have been more and more breakthroughs. With the advent of technology, kids will need to perform more complex skills in science. We can't pretend to design curriculum in the same way and about the same material that we used to. Just like the field of biology is expanding, so is the field of education."

How do teachers shape learning experiences so students can improve their knowledge, skill development, and conceptual insight? Today's high school educators must continually revise their curriculum designs to reflect meaningful, sustainable, relevant, and timely curriculum. If they don't, high school students will be firmly planted in old ground.

Our students certainly must build on the great traditions of past pedagogy, and we want them to understand and examine classic works, but we must stop focusing on *exit* requirements—which suggest that the goal of the high school is to get students out of the building—and carefully design curriculum to focus on *entrance* requirements for their success in work, college, careers, relationships, and an interconnected global society.

A common goal of high school reform is the need for *integrated curriculum.* NASSP's *Breaking Ranks: Changing an American Institution* (1996) declared two years ago that high schools must go beyond their regimented view of departmentalized curriculum and build connected experiences for learners. One of the *Breaking Ranks* recommendations is: "The high school will integrate its curriculum to the extent possible and emphasize depth over breath of coverage" (NASSP, p. 11). In the past, many viewed this type of integration as simply putting two departments together and creating a unit or course. Certainly merging disciplines that share common issues is a form of integration, yet integration can be defined in more dynamic terms.

This monograph targets specific changes for high school curriculum and examine three elements of curriculum design—content, skills, and assessment—and how they can be upgraded for our present and future high school students. When these elements are matched in creative and coherent designs, students naturally integrate them. This monograph also highlights design practices that promote this integrated learning, lacing examples of programs that exemplify contemporary curriculum.

Most curricular modifications require corresponding structural changes. It is not possible for two teachers in different departments to truly team without shared time blocks and shared students; therefore, reference to scheduling and grouping practices will be included in the descriptions. These programmatic structures—whether teams, blocks, seminars, field experiences, mentorships, night classes, or six-day rotations—all have strengths. It is the combination of designing engaging and riveting curriculum in a matched structural template that best serves learners.

Breaking New Ground in Content for the Curriculum

No longer hiding out in departmental fortresses peering furtively into another department's particulars, today's educators plan high school curriculum more intelligently.

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Design Practice #1: To organize their content, high school teachers should select a specific format from a range of options.

A continuum of options for designing curriculum allows for more satisfying and meaningful types of content integration between and among subject areas. The following, based on an article in the NASSP *High School Magazine* (Jacobs, 1987) summarizes the characteristics of this continuum:

Discipline Field → Parallel Disciplines → Interdisciplinary → Student-Centered → Setting-Centered.

• *Discipline Field-Based Design*

The discipline field-based design focuses on a specific field of knowledge. When this approach is well-executed, the purpose of the curriculum supports the perspective and best attributes of that field, and the specific problem-solving skills, terminology, concepts, and facts encourage the student to be an active practitioner of the discipline. Rather than simply studying science in an isolated and fragmented way, students become scientists, conducting scientific experiments and using the unique skills of the scientist.

Example: A unit on the history of a community using the techniques and methods of modern day historians to create commentary and comparative histories.

• *Parallel Discipline Design*

When high school teachers in different departments sequence their lessons to correspond to lessons in another discipline, a parallel configuration emerges. The content itself is not altered; rather, the lessons are implemented simultaneously and the concurrent units complement each other. While teachers make no concerted effort to connect disciplines, the students themselves make those connections.

Example: An English teacher plans her classes' study of The Great Gatsby to correspond to the time her students are studying the 1920s in their American History course.

• *Interdisciplinary Design*

Concepts, skills, and assessments from two or more disciplines are brought together in a formal investigation of a common theme, issue, problem, topic, or work. This option is different from parallel teaching in which the focus remains firm on the scope and sequence of each discipline. Here, there is an attempt to use an array of discipline perspectives.

Because there must be a sensible reason to connect these investigations, teachers must not simply bring disciplines together for the sake of making an interdisciplinary connection. In addition, each and every discipline need not be involved with a unit plan to make it interdisciplinary. Whether it is 2 disciplines or 10, the goal is coherency.

Example: "Contemporary Japan," bringing together literature, social studies, and the arts; "Managing a Business from the Home," a math and home economics combination; "The Ethics of Genetic Engineering," a science and philosophy course; "Waco, Oklahoma City, and the Second Amendment," an English and civics unit; "Systems: The Human Anatomy," a physical education, biology, and health combination.

• *Student-Centered Design*

The unique characteristic of this option is that the individual student originates the curriculum. The root word in the three previous options is "discipline," so the origin of the work

comes from local, district, or state-prescribed curriculum concepts. These certainly can have legitimate value and our task is to make them compelling for our students.

In a student-centered or constructivist curriculum model, the teacher creates a learning opportunity based on a specific problem or issue derived from the student's personal interest. This approach is more common in early childhood classes in the United States, in private schools committed to this philosophy, and in senior independent study projects in high school. When they implement this strategy, teachers must help learners distinguish between mild or whimsical interests and those topics worthy of serious study.

Example: An independent study on "Developing a Policy for the Homeless in Our Suburb," "How To Get Published as an Adolescent," or "Designing a Safety Chair for Infants on Commercial Airlines."

• *Setting-Centered Design*

This option is predicated on integrating the curriculum experience in a specific environment, usually off-campus. The most frequent type of integration occurs in high schools with field placements, internships, community service, and in off-campus experiences.

Examples: A one-day-a-week internship at a medical center; a training program at a computer design company; a community service job at a senior citizen center; a one-week field study at a conservation area in the marshlands.

During the school year, a teacher likely will use many if not all of these design options to promote student growth. No one strategy is best; the key is selecting the best option for the students given the specific purpose at any time during the year (Jacobs, 1997).

Design Practice #2: Upgrading and Revising Content to Focus on Contemporary Issues and Problems

The curriculum disintegrates when instruction lacks integrity or when interdisciplinary planning lacks a natural connection. Coherent designs predicated on substantive and relevant content should be the watchwords for today's high school curriculum planners. It is no small concern that many American high school students graduate with a limited understanding of the history of the past 30 years. High school history teachers often say that they "were able to cover up to Vietnam" in their coursework. How can we send graduates into adulthood with that kind of gap in their knowledge?

The surge of interest in school-to-work and school-to-career programs has raised the issue of integrating real world and next-century preparation into the curriculum. Our students should be taking a contemporary look at their world in a manner that reflects the media and technology that surround them. Consider the following potential courses and seminars:

The Ethics of Genetic Engineering

Writing the Teleplay: The Sitcom and Beyond

Moby Dick Meets Godzilla: What Has Happened to Archetypes?

The Quest for Identity: Holden Caulfield and Siddartha

The Effect of Media on Child Development

Our Constitution Now: Did the Amendments Amend?

Using Technology: The Tools of the Modern Day Historian

Home Interior Designs for Low Income Housing

Fighting Future Diseases

Future Work and Future Choices

Is the Civil War Still Going On?

Who Owns Outer Space?

Starting Now and Working Backwards: How History Has Created the World We Live In.

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The key issue is engaging the students by framing content with a style that matches the interests and characteristics of the adolescents. Much of the material may remain constant but revised presentation will open new frontiers.

Design Practice #3: Teachers frame their curriculum content and classroom investigations around sets of essential questions.

One of the anomalies of educational conversation is the phrase, "I have to cover the curriculum." The most obvious problem with this declarative sentence is the first person pronoun, because it identifies the teacher as the one who "covers the curriculum." What are the students doing?

Even more revealing is the verb "cover." In our school parlance, coverage reflects the treadmill quality of classroom life, perpetuating the myth that if a teacher is able to race through the material by talking about it in front of the class, the curriculum has been addressed and learned. But by whom? Clearly teachers who have had years of experience as "coverers" may have internalized so much that they have, indeed, learned more with each revisiting of the course lectures. The more central issue is this: six months later, what do the students recall? What have they learned?

High school teachers have a more powerful option than attempting to cover everything in the overwritten syllabus.

Framing the curriculum content around a set of essential questions helps focus learners. Embedded in each question are the core concepts that will help students focus their efforts to acquire knowledge, gather factual information, and cultivate personal insight. Essential questions that clearly declare the fundamental purpose of a unit or course are a powerful tool for helping students select the most critical aspects of study. They are akin to chapter headings in a book that help the reader organize the material in the text.

From another perspective, essential questions help the teacher deal with the dilemma of trying to "cover" everything and ending up with a skimpy overview. The fundamental design problem for high school teachers is: "Given the amount of time I have to spend on this particular unit or course, what is the essence, that is, what is essential for my learners to explore, to examine, to know" (Jacobs, 1997). Perhaps one reason students in the United States score lower on achievement tests than students in other countries is related to this issue. Japanese eighth grade science textbooks average 8 new topics per year, while American texts address 65 (Lewis and Tsuchida, 1998). Students understand and retain a few critical concepts and the requisite facts that undergird them better than they retain information presented via a fast trip through a flood of unrelated facts.

Using essential questions connects the disciplines, which helps alleviate the potpourri problem that has plagued curriculum designs (Jacobs, 1989). For example, in one high school, the English, social studies, and art teachers were collaborating on a study of *The Renaissance: Creativity Reborn.* Rather than simply diving into what is a fascinating and rich period of history, the curriculum designer wisely guided the students through the examination of these essential questions: What led to the "rebirth" of creativity and invention? What was distinctive about the Renaissance in different parts of Europe? Who were some of the great Renaissance leaders? How did the Renaissance send the European World into the New World? All of these questions can be addressed in English, social studies, and art, but from the learner's point of view the connection is explicit

in an interdisciplinary unit. In keeping with our chapter heading metaphor, it is as if all of the teachers and their subjects are in the same book with the same chapter headings.

Breaking New Ground: Precision Skills and the New Basics

To be successful in the 21st century, today's high school students need to be adept at an array of skills, ranging from refined reading, writing, speaking, and listening skills, to technology, personal management, and collaborative workplace skills. One of the characteristics of quality curriculum design is that the required skills are contextualized, not taught in isolation. It is here that the prior discussion of essential questions resonates. Students use precise skills and insight in answering the essential questions. Adolescents do not take skills seriously if they view them as limited or pedestrian. A coherent fusion of essential skills with meaningful content is likely to increase their motivation.

Design Practice #4: Curriculum designs should develop the precise skills and techniques necessary for entering careers and adulthood.

Strong high school curriculum design defines a precise skill focus; weaker design attempts to address broad and vague skills. For example, if a high school English teacher says the goal of a curriculum unit is to "develop writing skills and thinking skills," it is difficult to know exactly which writing and thinking skills are to be developed and how they will be assessed. But if this teacher refines the goal to focus on "writing personal narratives using dialogue" or "increasing sentence variety in the paragraph construction," the target skill becomes clear.

Curriculum designers should discern the difference between those skills that are inherently discipline field-specific and those that are cross-disciplinary. Examples of discipline-field specific skills are "balancing an algebraic equation" or "using charcoal to establish line in figure drawing." On the other hand, some precise skills cut across discipline lines and are applicable to almost any field. An excellent model of precise interdisciplinary skills can be found in the Secretary's Commission on Achieving Necessary Skills (SCANS) Report. The SCANS Report identifies both professional and personal "entrance" skills. The five clusters of skill competencies are based on a three-part foundation set of skills. Not only do these skills deal with practical "life skills" for employment, they emphasize academic skills, language competencies, and habits of mind that reflect genuine character.

SCANS uses the general competency and foundation phrases as headings and more precisely defines the specific techniques related to the general heading. For example, *Thinking Skills* is the heading for decision making, which is defined as "specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternatives." This last definition can be observed, taught, and demonstrated. It is a precise operational skill. (See SCANS next page)

Too often, these skills are viewed as part of the vocational education program or the school-to-work program. But these skills are important for everyone, as are the five competencies. If I am a science, math, history, art, music, or English teacher, I expect my students to deal with all five of these competencies. I want my students to identify, organize, and plan resources. I want my students to work with others. With some modest tinkering with wording, these skills can work in any high school situation.

SCANS Skills and Competencies

Three-Part Foundation

1. **Reading:** Reads, writes, performs arithmetic and mathematical operations, listens, and speaks:
   - *Reading:* Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules
   - *Writing:* Communicates thoughts, ideas, information, and messages in writing, and creates documents such as letters, directions, manuals, graphs, and flow charts
   - *Arithmetic/mathematics:* Performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques
   - *Listening:* Receives, attends to, interprets, and responds to verbal messages and other cues
   - *Speaking:* Organizes ideas and communicates orally

2. **Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons:
   - *Creative Thinking:* Generates new ideas
   - *Decision Making:* Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses alternatives
   - *Problem Solving:* Recognizes problems and devises and implements plans of action
   - *Seeing Things in the Mind's Eye:* Organizes and processes symbols, pictures, graphs, objects, and other information
   - *Knowing How To Learn:* Uses efficient learning techniques to acquire and apply new knowledge and skills
   - *Reasoning:* Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.

3. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, integrity, and honesty.
   - *Responsibility:* Exerts a high level of effort and preserveres toward goal attainment
   - *Self-management:* Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control
   - *Integrity/Honesty:* Chooses ethical course of action

Five Competencies

1. **Resources:** Identifies, organizes, plans, and allocates resources
   - *Time:* Selects goal-relevant activities, ranks them, allocates time, prepares and follows schedules
   - *Money:* Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives
   - *Materials and Facilities:* Acquires, stores, allocates and uses materials or space efficiently
   - *Human Resources:* Assesses skills and distributes work accordingly, evaluates performance, and provides feedback.

2. **Interpersonal:** Works with others
   - *Participates as a Member of a Team:* Contributes to group effort
   - *Serves Clients/Customers:* Works to satisfy customers' expectations
   - *Exercises Leadership:* Communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies
   - *Negotiates:* Works toward agreements involving exchange of resources, resolves divergent interests
   - *Works with Diversity:* Works well with men and women from diverse backgrounds

3. **Information:** Acquires and uses information
   - *Acquires* and evaluates information
   - *Organizes* and maintains information
   - *Interprets* and communicates information
   - *Uses* computers to process information.

4. **Systems:** Understands complex inter-relationships
   - *Understands Systems:* Knows how social, organizational, and technological systems work and operates effectively with them.
   - *Monitors and Corrects Performance:* Distinguishes trends, predicts impacts on systems operations, diagnoses systems performance, and corrects malfunctions
   - *Improves or Designs Systems:* Suggests modifications to existing systems and develops new or alternative systems to improve performance.

5. **Technology:** Works with a variety of technologies
   - *Selects Technology:* Chooses procedures, tools, or equipment, including computers and related technologies
   - *Applies Technology to Task:* Understands overall intent and proper procedures for setup and operation of equipment
   - *Maintains and Troubleshoots Equipment:* Prevents, identifies or solves problems with equipment, including computers and other technologies.

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As students investigate the essential questions using precise skills, they are integrating the curriculum into real-life contexts. These skills, coupled with discipline-specific skills, form an array of competencies that are necessary for 21st century students.

Curriculum developers must add one remaining element to the composition: assessment. How will the learner know that he or she has gained knowledge and insight? How will he or she see the development of the requisite skills targeted in a unit or course?

Breaking New Ground: Integrating Assessment in Curriculum Design

Assessment is a search for evidence of learning. At the most fundamental level, the learner can reveal growth or regression through a tangible product or an observable performance. The only way the student and the teacher know that progress is ongoing is by what the learner says or does.

The past 15 years has seen a surge of interest in revitalizing assessment by refocusing on what the student can demonstrate rather than what the teacher did or did not do. With regard to assessment, a critical design strategy is the fusion of assessment decisions with content and skill choices.

Design Practice #5: Assessment products and/or performances should be targeted to provide comprehensive evidence of skill development, conceptual insight, and knowledge acquisition.

In the past, the most popular means of assessing student performance was standardized testing. However, because of state standards' demands to include a wide array of student work, schools have moved toward including student performance tasks that are directly related to the curriculum. The key is to seek "comprehensive" assessment to provide as much evidence as possible about how our learners are performing.

Standardized testing is helpful for assessing a particular skill or students' memory of decontextualized information. For example, standardized testing is one way to measure a student's linguistic ability by assessing his or her ability to choose the appropriate verb form to complete a sentence correctly. However, the validity of this type of assessment is questionable because a student can, by guessing, select the correct choice without knowing the correct answer.

When a student's ability to apply reasoning, composition, and evaluative skills in a problem solving situation must be assessed, standardized tests aren't effective—not because of their design, but because of their use. Standardized tests are meant to be diagnostic tools for very specific competencies, yet too many educators view them as end points. High school teachers are wise to use the data from standardized tests in curriculum revision, because these data indicate students' reading comprehension skills in narrowly defined contexts.

Comprehensive assessment directs curriculum designers to use the essential questions as the focus for units and courses. As students pursue these questions the resulting products and performances serve as the basis of assessment. This coherence creates quality classroom experiences.

For example, three essential questions frame a ninth grade social studies unit on immigration:

1. What makes people immigrate?
2. What obstacles do immigrants encounter?
3. How do immigrants affect their new communities?

To get a clearer picture of the issue of coherence, let us look at the first question, articulate sets of precision skills, and then identify corresponding student assessments. Note that all skills and assessment directly correspond to the essential question.

Essential Question: What makes people immigrate?

Skill: Interviewing for information

Assessment: Transcript

The student will interview 10 immigrants to discover why they immigrated. Interviews should be turned in as a transcript from an audiotape or written notes in the question and answer format.

Skill: Interpreting primary source data

Assessment: Note cards

The student will read 10 diary entries from immigrants in the data base from Ellis Island and identify why they immigrated. All note card entries will identify the source, the date, a paraphrased summary, followed by the student's interpretation.

Skill: Analyzing demographic maps

Assessment: Labeled maps

In groups of three, students will read and review the data from demographic world maps that describe immigration patterns every 20 years beginning in 1900. Students will label these maps, reflecting patterns from one country to the next and compare the pattern to the economic power of those feeding and receiving sites and national and ethnic patterns. Students are encouraged to find other factors that could contribute to immigration trends.

Skill: Posing assertions and supporting arguments

Assessment: Position paper

The student will generate an assertion conveying his or her thesis regarding the primary factors that cause people to immigrate. Data from both secondary and primary sources will support the arguments. The result will be a position paper detailing the students' view.

This example provides a direct correspondence between three elements: content, skills, and assessment.

Three tiers of classroom experience are critical variables in curriculum design: drill and practice, rehearsal and scrimmage, and authentic performance. A basketball coach knows that his or her players are "learning basketball" by watching their performance at all three tiers. During practice, players are actively involved in *drills* that are based on what they need to improve their game. The coach plans the structured *practices* and controlled *"rehearsals"* to allow the players to simulate and prepare. The real test of the players' skills and knowledge comes when they face an opposing team whose strategies and plays are unknown. In short, the learners are now asked to perform authentically in the game as basketball players (Jacobs, 1986).

The points raised earlier resonate here: We do not want our high school students to simply study science, we want them to be scientists. We do not simply want them to study economics, we want them to be economists. We do not want them to simply study art criticism, we want them to be art critics. We do not want them to simply study grammar, we want them to be editors. In the past, we asked students to do a great deal of drill and practice, but with the current changes in standards and more sophisticated curriculum design work, we are asking them "to play the game."

Design Practice #6: The type of assessment should match the developmental characteristics of the adolescent.

The difficulty of the school's curriculum content increases as students move from elementary school to high school, and required

skills become more complex. However, at the same time, the types of assessment do not change. One might assume that the type of report required of a student at the high school level is more challenging than that required of a student at the elementary level, but this is not always the case. A fourth or fifth grader is generally motivated to be a "reporter" in terms of gathering information on a topic and reporting it back, and most can do so effectively. High school students should be expected to be more than reporters; they should produce works that illustrate their research and development skills. Rather than reports, high school students should be assessed through such vehicles as:

legal briefs
literary and film criticism
professional journal articles
policy statements
case studies
sports analysis
community action plans
business plans
statistical analysis
product proposals
blueprints
choreography plans
interior design plans.

When revising the quality of the high school curriculum, teachers should review the developmental characteristics of their students. These students have increased capacity for dealing with real world concepts, issues, and problems, and whether they are willing to deal with it or not, most high school students recognize the future is around the corner. Some will retreat and some will launch into that future. Our task is to prepare them for next steps by introducing them to complex and engaging classroom curriculum activities.

But how can we carry out solid curriculum plans without supportive structures that house our work? The structures of the school program are integral to the success of our learners.

Design Practice #7: The purposes of curriculum designs are matched by structural formats that best serve the learner.

Three structures fundamentally "house" curriculum designs: the schedule, the grouping of students, and the configuration of staff. In the past, the concept of the six-hour day with eight subjects was seen as a means of giving students equal exposure to the subjects. Curriculum was developed to fit that form, and regardless of student needs, teachers could plan only 40-minute tasks.

Today, schedules are designed with curriculum in mind: form follows function. Students are grouped based on needs as opposed to school habits. Teachers are working in divisions and teams, as well as departments.

As schools wrestle with the best format to support students, educational leaders should think of a menu of program options that pull together school structures in practical terms.

Templates help educators lay out structural plans. For example, a "course" is a template with specific structural connotations. When planning, designers immediately think of the format first—such as the course—and plan curriculum to work within that particular format. Each template has structural attributes that support or prohibit the success of the educational purposes. The following are examples of curriculum templates:

Courses

- Time: year-long, semester, quarter, or trimester; generally meet daily in 40-minute periods, although can be adapted for blocks of time

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- Targeted Learners: generally for middle school, high school, and undergraduate students
- Student Grouping: students grouped chronologically or multi-aged; groups predetermined by staff or voluntarily elected by student
- Teacher Configuration: usually individual instructor but can be team taught
- Curriculum: discipline field-based or interdisciplinary but dependent on the schedule for interdepartmental collaboration.

Seminars

- Time: year-long, monthly, semester, quarter, trimester; generally meet once or twice per week in extended sessions of 45–90 minutes
- Targeted Learners: upper elementary, middle school, high school, undergraduate
- Student Grouping: voluntary or teacher designated; requires increased demands for independent reading and scholarship, and cooperative skills in discussion
- Curriculum: focused on contemporary issues and current applications; inquiry-based; frequently interdisciplinary

Units

- Time: usually two to eight weeks in length; can be daily or every other day in conjunction with other types of classroom experiences
- Targeted Learners: pre-K through grade 12
- Student Grouping: grouped by teachers for instruction within pre-existing classes or teams
- Teacher Configuration:: individual classroom teacher, teams, or interdepartmental; inter-grade collaborations among staff possible on short-term units
- Curriculum: often interdisciplinary; can be discipline field-based; focused on a theme topic, issue, work, or problem.

Strands

- Time: year-long, daily, or regular weekly experience
- Targeted Learners: usually K-8
- Student Grouping: usually individual or small group
- Teacher Configuration: individual teacher
- Curriculum: specific task monitored during a long period of time; journal entries; advisory groups; regular conferences between students or with teachers.

Field Studies

- Time: weekly or bi-weekly during a semester or quarter
- Targeted Learners: high school and undergraduate; sometimes upper elementary and middle school; either extension groups from on-going class work or students electing to engage in on-going field studies
- Student Grouping: individual or small group with support group at school
- Teacher Configuration: supervisor teacher from school working with professionals at the designated site
- Curriculum: based on off-campus investigation of real-world settings to extend, supplement, and embellish student investigations; environment and the professionals in that setting integrated into the student's experience.

Night Sessions

- Time: once or twice a week using the seminar model for 90-120 minutes per session

- Targeted Learners: high school and undergraduate; for the high school population, the night class can serve as a pre-college or as help for the student who is employed during the day
- Student Grouping: elective or teacher designated grouping
- Teacher Configuration: individual or teamed
- Curriculum: interdisciplinary or discipline field-based; a focus with readings interspersed on the student's own time between night sessions.

Two-Year Houses

- Time: two-year courses subdivided into units with teachers in different departments using common blocks of time
- Targeted Learners: student teams remain constant for two years
- Teacher Configuration: teachers in teams representing several departments remain with the same student group for two years
- Curriculum: strength in continuity as teachers plan together for a two-year period; frequently interdisciplinary in nature.

Forums

- Time: event-based for evening or daytime sessions; usually 90-120 minutes
- Targeted Learners: students of any age
- Student Grouping: sub-groups within classes participate based on teacher designation; students either take a stand or observe forum and provide feedback to the speaker during the session
- Teacher Configuration: individual or team
- Curriculum: provides opportunity for students to take a public stand on an issue that might emerge in a course or unit.

Exhibitions

- Time: presentation at special session ranging from 20-90 minutes
- Targeted Learners: frequently seniors, eighth graders, or fifth graders at the culmination of major studies or grade level.
- Student Grouping: usually independent; can be small groups
- Teacher Configuration: advisory with students; usually individual rather than team
- Curriculum: student-centered projects based on research and problem-solving; can focus on the final exhibition of work with an oral presentation and question and answer session with peers and adults.

Exploratories

- Time: several days or class sessions in the early stages of unit, seminar, or course design
- Targeted Learners: pre-K through grade 12
- Student Grouping: flexible instructional groups
- Teacher Configuration: individual or team
- Curriculum: as a prologue to concentrated unit, course, or seminar experience; investigations into stimulating experiments or new material are open for discovery.

Labs

- Time: regular and ongoing time periods ranging between 45 and 90 minutes
- Targeted Learners: K-12
- Student Grouping: designated by teacher; students often paired for interaction
- Teacher Configuration: individual or teamed
- Curriculum: intensive investigations and extension of core program; can be and

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should be considered for all academic areas (not only science) or by skill (such as writing labs).

By laying out a set of potential templates in advance, educators extend the possibilities for lively and powerful learning. The structural components of a school can best support curricular templates when based on the needs of the students in a specific setting. Educators should become more informed about the designs that will support the best intentions for learning and teaching. Forms should serve student learning at each level of instruction.

Troubleshooting When Integrating the Curriculum

The recommendations for design practice thus far have focused on nuts and bolts decisions regarding the composition of the curriculum. The last recommendation attends to the question of the human. When high school educators sit around a table and begin to hammer out the nature of a proposed curriculum, they bring beliefs and perspectives that are reflected in their "blueprints." Altering curriculum boundary lines can have a ripple effect in the culture of the school.

Design Practice #8: High school curriculum planners should give themselves permission to succeed by learning from the work of others.

One of the strangest phrases educators use when initiating new programs goes something like this: "In our desire to begin new programs, we have permission to fail." Do we really have the right to fail with young people? It seems that a more constructive beginning place is the right to succeed. If we create the conditions to achieve results, we are more likely to do so. The following suggestions come from seasoned planners to help educators avoid the pitfalls and reroute toward progress. Two of the planners were high school principals, three were teachers, and two were district administrators. Some of the suggestions deal with attitudinal issues, some with organizational habits, and some with leadership approaches. All of the suggestions are garnished with admirable common sense.

- One year of advanced planning time is essential to success. The teachers who will be expected to carry out any new program should be among the first to be identified when new high school programs attempt to break ground. Too often, an administrative team lays out a timeline for curriculum work and scheduling changes and the prospective teachers are the last to know. Teachers need to be in on the ground floor of planning. As one of the high school teachers from Connecticut said, "There were so many people for our team to speak with before we went to a ninth grade interdisciplinary team—counselors, parents, students, administrators, special education teachers—but mostly we needed time with each other. We had never teamed before. The monthly released time we had for the year before the program began allowed us to work through so many concerns." I would recommend a year of advanced planning for any major change involving scheduling and grouping. If the existing scheduling structure is in place, teachers need two to three months to properly design new courses and units.

In the early planning stages of high school reform, certain departments or members of the faculty are often marginalized. The arts faculty, athletic department, specialized course instructors, vocational teachers, service learning advisers, guidance counselors, media specialists, and other personnel are central to the success of the program. For the entire school to be invigorated by the redesign process, their inclusion should be a forethought not an afterthought

• Outside research is critical for success. Teachers and administrators should provide opportunities for conferences, workshops, and training sessions concerning new high school initiatives. When groups of high school planners attend staff development programs and interact with colleagues from other schools who share their concerns, the networking is often more important than the presentations. A high school department chair from Brooklyn said, "We received a grant that supported our planning group going to New Orleans for a conference on high school reform. Flying down you sense the excitement building. On the way back we were debriefing all that we had learned. Our spirit and new ideas turned the school around."

School site visits that are conducted with a specific intent can be valuable. While it is encouraging to visit other schools, the observation should be directed rather than nebulous. Reading books, articles, and research prior to the visit expands the power of a planning group to make decisions about curriculum designs. Many high school planning groups review this outside perspective in study groups prior to setting up curricular programs.

• Internal research is necessary for success. The fruits of institutional introspection are formidable. Until a high school staff looks honestly at current practice and its impact on the learners, outside research may be shallow. As a high school principal mentioned at a training workshop in Athens, Georgia, "Curriculum mapping has turned us around. We were talking the reform game, but we took genuine action when we sat down and honestly looked at what we were doing. We couldn't run from August through early June." Until we confront the reasons for the need to improve, then replacing the old practice becomes cumbersome.

• Voluntary teams should be the core of the first year of change. A number of principals have shared that the first year of a new program may prove tough and courage is required. To ensure a solid beginning, new curriculum projects are best served by the motivated. The work and mental energy required to generate new curriculum stems from professionals who are actively interested in extending themselves. Sharing a operational vision is a critical point of departure. When people do not choose to begin pilot efforts, the program becomes grounded.

• Communication with middle school receiving sites sets the stage for success. Far too little dialogue about curriculum occurs between high school and middle school personnel. The result is often blame and finger pointing when students do not succeed. Many middle schools have worked for years in interdisciplinary teams and with resulting curriculum; they have much to offer the high school faculty beginning this work. Conversely, high school teachers should share the power of their experience with the middle school staff. When freshmen arrive it is important for the high school staff to reinforce skills that are being addressed in middle school and those that are not. Transition meetings regarding curriculum are best held at the end of the school year. Many educators argue for transitions dealing with personal student questions in the early part of the year when all teachers know the students.

• Active work with parents enhances curricular success. Most parents have little basic knowledge about the nature of the high school curriculum and all would benefit from that knowledge. It is easier for parents to support their students when they understand the nature of the courses and units. Part of any curriculum design involves homework. As Mary Ann Holt, principal from Chattanooga, Tenn., stated, "I encourage school personnel to actively share

curriculum maps and assessment data with parents. I think we see the changes in the kids' attitudes right away when they know we are communicating about everything from homework to upcoming units." Frequent and simple communication with parents and caregivers about monthly plans in classes and critical deadlines for projects are enormously helpful to families.

• Integrating student-constructed issues and problems can revitalize courses. Students should be involved in curriculum design. Even when traditional and classical works are examined, weaving in student concerns can enliven their investigation. The techniques for improving curriculum design addressed here should be shared with students so they might participate in making creative changes in course design.

Summary

The eight recommended practices in this monograph should serve as coaching tools for school curriculum designers. High schools must break new ground in the design of curriculum and can start by viewing themselves not as conveyers of curriculum but as composers. By unpacking the genre of curriculum and extending the elements of content, skills, and assessment, we can generate a higher level of classroom experience. By viewing ourselves as editors and designers, we upgrade our professional capacities as curriculum makers.

The implementation of integrated curriculum involves reconsidering the structure of time, staff, and learner groups. Thoughtful planning and deliberation produces better solutions to the dilemma of comprehensive curriculum renewal. The ultimate beneficiaries are the students who open our classroom doors each year. We must grow with them.

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